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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,041	12/04/2003	Olivier Bertrand	P69303US0	4858
7590 JACOBSON HOLMAN 400 SEVENTH STREET N.W. WASHINGTON, DC 20004			EXAMINER HARRIS, GARY D	
			ART UNIT	PAPER NUMBER
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			10/09/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/727,041

**Applicant(s)**

BERTRAND ET AL.

**Examiner**

Gary D. Harris

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 26-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

Claims 26-32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 7/17/07.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term " biocompatible and/or biodegradable" in claim 17 is a relative term which renders the claim indefinite. The term " biocompatible and/or biodegradable " is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The quantity or amount of biocompatibility and/or biodegradation is not stated in specification and one skilled in the art would not be comprised of the degree of compatibility or biodegradation expected.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 16, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Bureau et al. US 2003/0149122.

As to Claim 1, 2, Bureau et al. '122 discloses films grafted by electropolymerisation (electrografting) as a process for depositing on a substrate formed from conductive surface (paragraph 31) and an electrochemical route utilizing an alkaline ion as an intermediate agent (Paragraph 12) for a structural monomer which may be a methyl methacrylate (MMA) (same structure as claimed) (paragraph 80) and utilizing an addition reaction step (paragraph 236) and a film obtained with a preformed polymer (applicant's group X)(Paragraph 101). Additionally, Bureau et al. '122 discloses polymerization by chemical route, polymers obtained by cationic, anionic or radical means (paragraph 68) and the use of non-quaternised nitrogen atoms (paragraph 69) and retaining this last part in the growing film through the addition of difunctional polymerisable molecules in the electrolyte (Paragraph 236). Thus, Bureau et al. '122 disclose intermediate agents for poly addition reaction, as well.

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As to Claim 16, 17, Bureau et al. '122 discloses a process for the use of preformed Oligomers that would encompass claim (Paragraph 242-244). Since the quantity or amount of biocompatibility and/or biodegradation is not stated in specification the polymer disclosed by Bureau et al.'122 is considered to have at least some biocompatibility and/or biodegradation.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-15, 18-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bureau et al. US 2003/0149122 as applied to claims 1 and 2 above, and further in view of Matyjaszewski et al. US 5807937

As to Claim 3, Bureau et al. '122 discloses the process for polymerization by chemical route, these may be any type of polymer whether obtained by cationic, anionic or radical means, polyethylene glycol for example (paragraph 68) and the use of non-quaternised nitrogen atoms (paragraph 69) but does not disclose the use of NMP. However, Matyjaszewski et al. '937 teaches ligands including ethylenediamine which

would be analogous to an NMP. Additionally, Matyjaszewski et al. '937 discloses ATRP (atom transfer radical polymerization) utilizing polymethacrylate block then followed by a styrene in order to preparing block copolymers. It would be obvious to combine the Bureau et al. '122 with the Matyjaszewski et al. '937 invention in order to preparing block copolymers (Col. 25, Line 46-55). Additionally, it would be obvious to have "X" be an initiator for radical polymerization via nitroxide radical in order to control initiator efficiency (Col. 8, Line 1-39).

As to Claim 4, Bureau et al. '122 discloses the process for use of amines and amides for complexing properties (paragraph 26). Additionally Bureau et al. '122 discusses nitrogen atoms containing free doublets containing non quaternised nitrogen atoms (examiner interprets this as a radical) (Paragraph 68, 69).

As to Claim 5, Bureau et al. '122 discloses the process for use of functional groups having complexing properties chosen from groups including ethylene glycol (paragraph 26) and hyper-branched phenylenes (phenylene ether) (Paragraph 26).

As to Claim 6, Bureau et al. '122 does not teach the use of ATRP's. However, Matyjaszewski et al. '937 disclose ATRP polymerization resulting in uniformity and controllable products. It would be obvious to one skilled in the art to utilize the Matyjaszewski et al. '937 invention in the Bureau et al. '122 invention in order to have resultant uniformity and controllable products (Col. 6, Line 5-16).

As to Claim 7, Bureau et al. '122 does not disclose ethyl acrylates for forming primer coating. However, Matyjaszewski et al. '937 discloses the use of acrylates and the use of 1-phenylethyl chloride is the initiator and methyl acrylate is the monomer in determining size and average molecular weight which examiner considers to be in the family or homologous to the acrylate in the claim. It would be obvious to one skilled in the art to combine the references in optimizing the size and molecular weight of molecule (Col. 25, Line 26-31).

As to Claim 8, 9, Bureau et al. '122 does not disclose a polymer top coating of polyester. However, Matyjaszewski et al. '937 discloses the use of polyesters used with ATRP for easy conversion of a functional group such as polyester. It would be obvious to one skilled in the art to utilize polyesters in the top coat layer as the metallic complex would provide for easy conversion of a functional group such as a polyester (Col. 39, Line 16-30).

As to Claim 10, Bureau et al. '122 does not disclose a polymer top coating of polyester. However, Matyjaszewski et al. '937 discloses reversible formation of growing radicals in the production of a polymer utilizing ATRP resulting in narrow distribution of molecular weight. It would be obvious to combine the teachings of Matyjaszewski et al. '937 with Bureau et al. '122 in order to have a resultant narrow distribution of molecular weight (Col. 8, Line 47-58).

As to Claim 11, Bureau et al. '122 discloses chemicals that would result in ring opening but is not specific to ROP. However, Matyjaszewski et al. '937 discusses radical initiators to reverse the ATRP. It would have been obvious to one skilled in the art to utilize an ROP as it is well known that an ROP will reverse the ATRP as taught by Matyjaszewski et al. '937 (Col. 13, Line 38-64).

As to Claim 12, Bureau et al. '122 teaches the use of strong bases (alkoxide) in order to force the precipitation and or carbonates from metal salts. It would have been obvious to one skilled in the art to require an alkoxide in order to force precipitates and or carbonates from metal salts (Paragraph 9, 10, 11).

As to Claim 13, 19, Bureau et al. '122 discloses the use of acrylates (Paragraph 68).

As to Claim 14, 18 Bureau et al. '122 does not disclose a poly (ε-caprolactone) as a top coat layer. However Matyjaszewski et al. '937 discusses the use of an alkanooate esters as being excellent graft copolymers (examiner interpret ε-caprolactone as an alkonate ester). It would have been obvious to one skilled in the art to utilize an ε-caprolactone as they are excellent graft copolymers (Col. 26, Line 5-43).

As to Claim 15, Bureau et al. '122 does not disclose a D, L-lactide for forming a top coat layer. However Matyjaszewski et al. '937 discloses a cyanoacrylate ester as a



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monomer for the reaction (Col. 16, Line 46-65). It would be obvious to utilize the Matyjaszewski et al. '937 invention in the Bureau et al. '122 in order to provide a preferred monomer to the reaction to the polymer top coating.

As to Claim 18, Bureau et al. '122 disclose the use of acrylates (Paragraph 10 & 26).

As to Claim 19, Bureau et al. '122 disclose the use of preformed polymers but, does not disclose diacrylates.

As to Claim 20, 21, Bureau et al. '122 does not disclose a D, L-lactide for forming a top coat layer. However, Matyjaszewski et al. '937 discloses the use of macromolecules to have highly functionalized reactions and would inherently have a complementary reaction. It would be obvious to one skilled in the art to include a macromolecule in the Bureau et al. '122 invention in order to have highly functionalized reactions (Col. 32, Line 23-36).

As to Claim 22, Bureau et al. '122 does not disclose a reactive amino group. However, Matyjaszewski et al. '937 discloses a cyano nitrile (amino nitrile) as a preferred monomeric group. It would be obvious to incorporate the amino group in order to provide a preferred monomeric group to the reaction (Col. 16, Line 46-68).

As to Claim 23, Bureau et al. '122 does not disclose the use of succinimide. However, Matyjaszewski et al. '937 discloses the use of maleic diimides for periodic altering of copolymers. It would be obvious to one skilled in the art to provide imides in order to prepare periodic or altering copolymers (Col. 27, Line 20-49).

As to Claim 24, Bureau et al. '122 does not disclose a macromolecule is polystyrene containing amino groups. However, Matyjaszewski et al. '937 discloses polystyrene with amino groups as a preferred graft copolymer. It would be obvious to one skilled in the art to include polystyrene with amino groups, as a way to provide a preferred graft copolymer (Col. 38, Line 24-34).

As to Claim 25, Bureau et al. '122 does not disclose a top coating is poly (meta (isopropyl-2-amino) styrene-co-styrene). However, Matyjaszewski et al. '937 discloses metathesis polymerization, which reads on applicants claim. It would be obvious to one skilled in the art to combine the inventions in order to provide a reaction mixture containing a graft (Col. 37, Line 32-59).

References not relied upon are cited as art of interest.

Column and line numbers are provided for convenience. However, the entire reference should be considered.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary D. Harris whose telephone number is 571-272-6508. The examiner can normally be reached on 8AM - 5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol D. Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GH

  
**CAROL CHANEY**  
**SUPERVISORY PATENT EXAMINER**